

Applicant: Frank T. Hartley
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REMARKS

Reconsideration and allowance of the above-referenced application are respectfully requested. An additional claim and claim amendments are presented herein to obviate the current rejection. No new matter has been added.

35 USC § 132(a)

In order to expedite the allowance of the application, claims 5, 21, and 45 have been canceled. In addition, claim 44 has been amended to clarify that the ions are used to generate thrust.

35 USC § 112

Claims 1-6 and 8-49 stand rejected under 35 USC § 112. These rejections are respectfully traversed.

A bipolar thruster is described in paragraph 44 which recites "In this embodiment, a bipolar ion thruster may allow reversing the electrode potentials on the ionization membrane, causing the electrons to pass through the membrane, while ions move behind the membrane. The high velocity ions are expelled from the front of the thruster, and electrons are expelled from the rear of the thruster. This engine can therefore be reversed

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in this way." This passage is more than sufficient for a skilled artisan to readily practice the claimed subject matter.

The gas flow 800 may enter in through either the upper accelerator grid or the lower accelerator grid depending on which polarity the bipolar thruster is operating. The skilled artisan, seeking to implement the subject matter recited in the claims would readily adapt the specification without undue experimentation. It is respectfully submitted that details modeling regarding ion and electron flow is simply not required for a skilled artisan to implement the recited subject matter. Moreover, it is respectfully submitted that there is no requirement to define in the specification subject matter recited in a claim that is in means-plus function format. Accordingly, the rejections under 35 USC § 112 should be withdrawn.

35 USC § 102 / 103

Claims 1, 10, 21-24, 44, and 45 stand rejected under 35 USC § 102(b) as allegedly being anticipated by Webb. Claims 1, 2, 10, 21-24, 26-28, 30-32 stand rejected under 35 USC § 102(b) as allegedly being anticipated by Martin. Claims 1-6, 10, 21, 21-24, and 26-30 stand rejected under 35 USC § 102(b) as allegedly

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being anticipated by Harries. Claims 8, 45-49 stand rejected under 35 USC § 103(a) as allegedly being unpatentable over Harries in view of Hruby, Egorov, and Beattie. Claims 1, 2, 5-49 stand rejected under 35 USC § 103(a) as allegedly being unpatentable over Adamo in view of Hruby or Egorov. Claim 25 stands rejected as allegedly being obvious in light of Killinger. These rejections are respectfully traversed.

In order to expedite the allowance of the current application, the subject matter of previous claim 11 has been incorporated into claim 1. Similar amendments were made to the other independent claims. As claim 11 was previously considered, it is respectfully submitted that the amendments herein do not require further search or consideration. Claims directed to bi-polar ion thrusting and to tubular members for use in ion thrusting have been canceled or otherwise amended to delete such subject matter.

None of the references, whether considered singly, or in combination, contemplate an insulating element separating two electrodes as recited in the claims. Therefore, the claims, as amended, are allowable.

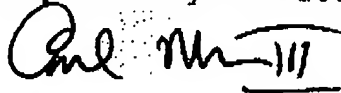
Concluding Comments

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It is believed that all of the pending claims have been addressed in this paper. However, failure to address a specific rejection, issue or comment, does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above are not intended to be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Applicant asks that all claims be allowed.

Respectfully submitted,



/ck3/

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